

Research capacity development in a South African higher education institution through a north-south collaboration

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Abstract

One of the constraints that prevent higher education institutions (HEIs) in developing countries from engaging in effective and essential research is a lack of research capacity. This study reports on a north-south collaboration between a group of Flemish universities and an HEI in South Africa with the specific goal of improving productivity, quality and capacity amongst researchers. A collaborative project with multiple sub-projects was established in 2003, and extended over two consecutive five-year phases. Document analysis was conducted of annual reports, monitoring and evaluation reports, curriculum vitae of participating members, and progress reports of students and supervisors during this time. The findings of the study illustrate the extent to which research capacity objectives can be achieved through a north-south partnership. Members of the collaboration were able to develop intra- and inter-disciplinary partnerships that resulted in maximising the capacity- building efforts, enhancing both individual and institutional research capacity.

Keywords: international partnerships; professional development; student development; staff development

INTRODUCTION

One of the constraints that prevent higher education institutions (HEIs) in developing

countries from engaging in effective and essential research is a lack of research capacity. According to Ezeh et al (2010), Africa produces less than 1 per cent of the scientific publications globally, thus highlighting a need for development in this area. This lack of capacity could be due to fewer staff with advanced degrees; poor research and publishing skills; and/or working in an institution with a poor research culture. Alternatively, it could be due to poor retention of staff who are capable of publishing, but who leave because of low salaries and/or limited resources and infrastructure or a lack of career pathing, leading to a 'brain drain' (Varkevisser, Mpmwaluko and Grand 2001, 282). One way for universities to address this is to provide quality education and continuing professional development opportunities for existing academics.

In order to address this paucity of research capacity in developing countries, the literature suggests that, through partnerships, collaborations and networking, HEIs can improve their productivity, quality and capacity (Okui et al 2011, 7). North-south partnerships have been well documented with both positive and negative outcomes, and various lessons have been learned (Jentsch and Pilley 2003, 1965). Some of the advantages for north-south collaborations are strengthening health research capacities at a systems level when focusing on the country's needs at an institutional level, with a focus on postgraduate programmes and securing funding, and finally at an individual level, that aims to strengthen the research capacity of people (Mayhew, Doherty and Pitayarangsarit 2008, 10). Some of the negatives include the structural inequalities between the north and south, and the fact that capacity-building is mainly focused on the south (Chandiwana and Ornbjerg 2003, 289). However, Jentsch and Pilley (2003, 1965) observe that a north-south collaboration, if structured properly, could be of benefit to both parties.

One of the key areas identified for development is the research capacity amongst health professionals. Ezeh et al (2010) state that in order to address the rising burden of diseases, improve health systems, and attain better health, the continent needs strong public health research capacity (Ezeh et al 2010, 6). Barrett, Crossley and Dachi (2011, 40) note that international partnerships have an increased potential to build interdisciplinary research capacity in order to positively affect policy and good practice within diverse contexts or settings. This is supported by Ezeh et al (2010, 6) who stress the need for interventions that build a substantial group of well trained and networked researchers across the continent. Tache, Kaaya, Omer and Mkony (2008, 147) maintain that systems-level development could assist in addressing the shortage of qualified health professionals and the health needs of a country, and achieving better health outcomes for the population. These authors support the idea that north-south partnerships can also assist in addressing institutional staff shortages in under-resourced institutions. International partnerships and collaborative initiatives are therefore seen to have increased potential for research capacity-building. Mayhew et al (2008, 11) conclude that capacity-building cannot be achieved without substantial financial input, and recommend that development partners should provide long-

term and in-country support for successful research capacity-building. Development partners need to be focused and make coordinated efforts to achieve maximal effect.

The current article reports on north-south collaborations with the specific goal of building capacity amongst researchers in a health sciences faculty at an HEI in South Africa while at the same time developing strong but informal relationships with research institutions in South Africa and Europe.

METHODOLOGY

Research setting

This study focused on a north-south partnership between a group of Flemish universities and a South African university. The southern partner is one of the previously disadvantaged HEIs which, as a consequence of their histories, face major resource and academic capacity challenges. The collaborative project was established in 2002, extended over two consecutive five-year phases, and was entitled 'Dynamics of Building a Better Society'. The project consisted of seven sub-projects which were located in different academic units of the south university. This report focuses on one of the sub-projects located in the Community and Health Sciences (CHS) faculty. In the first phase, the focus was on youth health and wellness, while sport for development was the overriding theme for the second phase. In the earlier parts of the first phase, the partnership focus was primarily on building research capacity through postgraduate studies and research for publication. This was accomplished at three levels, namely: (a) improving staff qualifications such as the attainment of master's and doctoral degrees; (b) increasing the number of postgraduate students; and (c) writing for publication. The partnership's core activities thus focused on increasing research capacity and enhancing scholarship, as evidenced by research productivity in publication format. In the current study, we describe the institutional partnership between the collaborating universities that focused on research capacity-building on an individual and institutional level in the first and second phases.

Research framework

The research framework was informed by the United Nations Development Programme (UNDP 2007, 4) in which capacity development is conceptualised as a process through which the ability to perform functions, solve problems, and set and achieve objectives is facilitated in a sustainable manner. The UNDP framework has five steps, namely: engaging the partners and building consensus; assessing capacity assets and needs; defining capacity development strategies; implementing the strategies; and finally, monitoring and evaluating these strategies (see Figure 1).

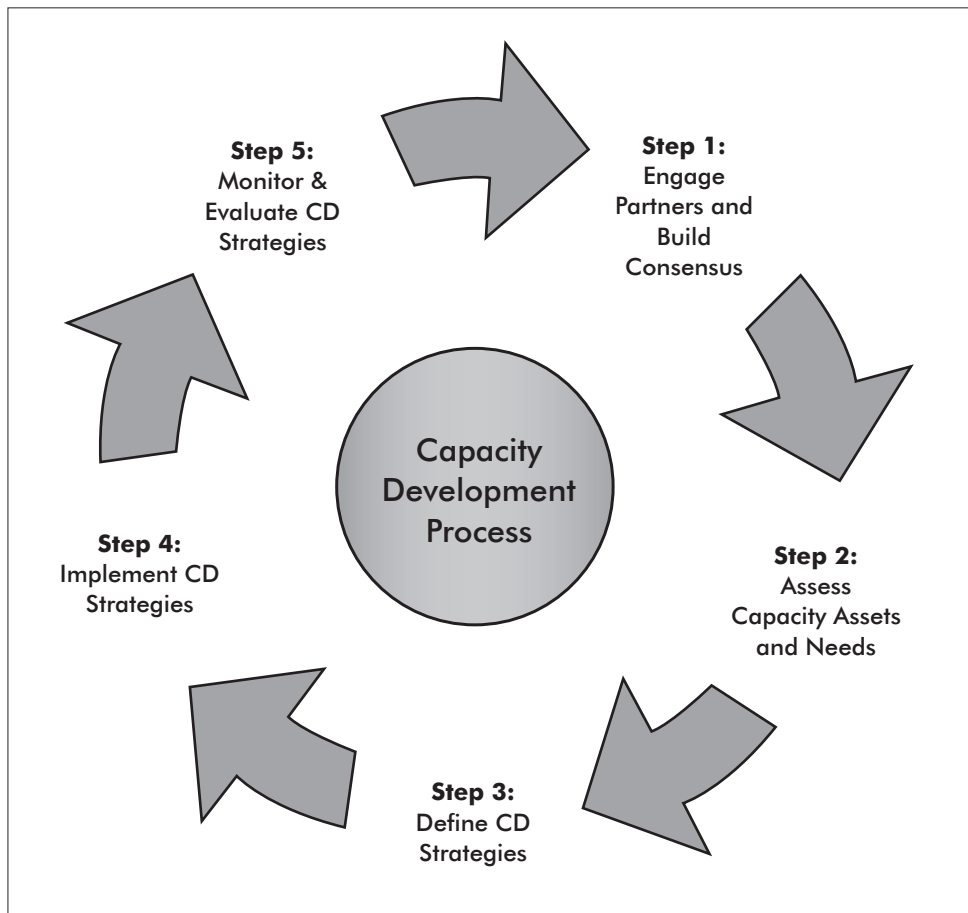


Figure 1: Capacity development (CD) process (UNDP 2007, 4)

Research design

The current research used an archival design within a case study approach. In archival research, evidence is extracted from original records or documents as a form of document analysis. Document analysis is conducted in social research where documents such as minutes and reports are explored to gain a clearer picture of the situation being investigated. Documents are frequently used to examine trend patterns and consistencies and to evaluate aspects of collaboration (Bowen 2009, 38; Currie and Hutchison 2005, 1103). Limitations of document analysis are that documents may be either incomplete or missing, and data is restricted to what already exists (Bowen 2009, 38). In addition, according to Crowe et al (2011, 1), 'A case study is a research approach that is used to generate an in-depth multifaceted understanding of a complex issue in its real life context'.

Data collection instruments

The data sources were: (a) annual reports published by the De Vlaamse Interuniversitaire Raad (VLIR) for the years 2000–2012; (b) monitoring and evaluation reports prepared by the Monitoring and Evaluation Unit of the organisation based on the indicators in the agreed Monitoring and Evaluation Framework for the years 2000–2012; (c) the curriculum vitae of participating members; and (d) progress reports of students and supervisors. The data collected included counts of research outputs and publications, higher degrees obtained, and workshops presented.

Data analysis

According to Crowe et al (2011), the framework for analysing information in a case study is a practical approach, comprising five stages, namely: familiarisation; identifying a thematic framework; charting; mapping; and interpretation. In the current case study, the capacity- building framework was used as the unit of analysis. For analysis of documents, three distinctive approaches are possible, namely: (a) the analysis of documents for their content (content analytic); (b) the analysis of documents as commentary (context analytic); and (c) the analysis of documents as actors (context analytic) (Miller and Alvarado 2005, 250). In the current study, content analysis was used to identify the capacity development outputs of the project. This analysis was conducted to report on the impact of the collaboration in building capacity at various levels. As document analysis is a form of qualitative research, a trustworthiness check was carried out by the different authors, who also researched the data content in order to try to confirm the primary findings. If any discrepancies were found, consensus was reached on the data to be reported.

RESULTS

This section is presented according to the stages of the capacity-development framework.

Step 1: Engage partners and build consensus

At the start of the partnership, the capacity of each partnering group was assessed. The resultant cross tabulation between role designations and demographic variables of the north-south partners is summarised in Table 1.

Table 1: Partnership capacity in the north and south

Role Designation		Project Leaders		Project Coordinators		Participants	
		(n = 1)	(n = 1)	(n = 1)	(n = 1)	(n = 6)	(n = 26)
Variable		North	South	North	South	North	South
Academic Status	Full Professor	1	1	1	1	5	
	Associate Professor						
	Senior Lecturer					1	10
	Lecturer						5
	Students						11
Qualification	PhD	1	1	1	1	5	2
	Masters					1	22
	Non-Masters						2
Gender	Male	1		1	1	5	8
	Female		1			1	18
Race	White	1		1		5	4
	Black		1		1		22

The results in Table 1 indicate that the majority of the participants were black (22/26), female (18/26), with lower academic statuses (22/26) in the south partnership. This indicates that the human resource capacity differed substantially between the north and south partners during phase 1 (2003–2008) of the partnership. As a result, the partners adopted human resource capacity-building as the primary focus of the project. To this end, the broad focus was to develop a critical mass of productive researchers in the south, focusing primarily on youth wellness, and specifically on risk and resilience. This further evolved into a strong emphasis on sport for development, and the partnership subsequently adopted this as a niche area.

Step 2: Assess capacity assets and needs

The capacity-building focus was further informed by an assessment of staff in the south, in a health sciences faculty. The documents reviewed identified a number of assets and needs that guided the focus of the partnership and informed subsequent interventions. Tables 2 and 3 respectively summarise the assets and needs of the south.

Table 2: Assets inventory

Assets	
Accommodating IOP	HR Policies and institutional development priorities
Large human resource pool	Pool of Southern candidates (staff) for recruitment and training
	Pool of National and international PG candidates/ scholars at Masters & Doctoral level
Improved international networking and collaboration	North-south & south-south collaborations and exchange programmes with other universities
Partnership funding	VLIR (north) for Resource development Human writing retreats student-staff exchanges.
	Infrastructural clinical/research/teaching lab equipment books & educational materials.

The core assets identified included an institutional operational plan (IOP) that accommodated the needs identified as priority areas for development. A direct outflow of the IOP was policies and infrastructural provisions that would contribute to creating an environment or context that was conducive to remediation or intervention. A further asset was an existing set of partnerships or collaborations, including the north-south partnership reported here, that formed the basis for development. In addition, a large pool of candidates for development existed in the staff and student complements.

Table 3: Needs of staff

Needs		Strategies
Capacity development	Postgraduate qualifications for staff	Staff relief
	Postgraduate qualifications for students	Scholarships
	Enhanced research productivity	Writing retreats for publication Skills training Special editions Conference presentations Conference organization
	Networking and collaboration	North-south staff exchange
	Niche area development	Centres of excellence
Skills development	Supervision skills and capacity	Co-supervision
	Training	Short courses Curriculum development – master’s programme
Resource development	Exposure to and quality resources and research infrastructure	Staff and student exchanges
	Acquisition of quality resources and research infrastructure	Funding

The results in Table 3 highlight four emerging needs as urgent in the CHS faculty, namely: (a) the need to improve the postgraduate qualifications of staff; (b) skills development to convert research to published formats; (c) the development of supervision skills and capacity; and (d) exposure to quality research infrastructure.

Step 3: Define capacity-development strategies

The overarching idea was that the strategies had to address a need or needs and build on the assets identified above. The strategies used to develop capacity occurred at two levels, namely, an individual and an institutional level. Over the ten-year period, the initial focus was on strategies for individual capacity development and gradually shifted to a focus on strategies for institutional capacity development. These two levels are understood as interacting with one another. Table 3 illustrates the strategies employed to address the needs identified. For example, staff relief as an individual strategy, addressed the need for improving staff qualification and capacity development. This in turn positively affected institutional capacities such as supervision and research outputs. Similarly, faculty writing retreats addressed the need to assist staff in developing skills to convert research into publications, and established a network of peers who could provide input and feedback in this process, as well as exchange a range of skills, including but not limited to editing, technical skills and critical reading skills.

Co-supervision of postgraduate research with academics from partnering universities in the north was employed as a strategy to develop the supervision capacity of staff at an institutional level. Skills and insights gained were applied to

supervision of students and generalised to other staff through mentoring and sharing. Staff and student exchanges were used as a strategy to address the need for exposure to quality research infrastructure and resources, with staff from the north having a more senior academic status.

Step 4: Implement capacity development strategies

The implementation rested upon strategies that were developed to address the identified needs and assets or resources in the faculty. There was consensus among the partners as to the strategies implemented to capacitate the staff and students of the southern partners. Clear targets and outcomes were set for capacity development that formed the parameters for monitoring and evaluation as reflected in the agreed Monitoring and Evaluation Framework (years 2000–2012). These outcomes had to be SMART, that is: Specific, Measurable, Attainable, Relevant and Time-bound.

Step 5: Monitor and evaluate capacity development strategies

The document analysis illustrated that monitoring and evaluation focused on the process and the outcomes. Process monitoring took place via internal and external mechanisms, through reporting and accountability structures intrinsic to the north-south exchange agreement. For example, the south project committee met quarterly to review project updates in the form of project reports and student progress reports. This committee in turn reported to a university-based management committee that coordinated all projects within the broader partnership. The management committee met monthly and reviewed submissions from the respective project committees, for example, annual reports and self-assessments completed at the end of each five-year cycle (two reports in total).

Existing university structures in the south were used to facilitate quality assurance by drawing on policies and procedures that contribute to good governance. For example, proposals for student research towards higher degrees and proposals for staff research were submitted to the Senate Research committee and its subsidiary committees for ethics approval, feasibility and methodological rigour. Similarly, financial reporting had to comply with the general procurement policies at the university and was subject to auditing.

Monitoring and evaluation of outcomes were relative to the objectives formulated in the project, and the development strategies were identified. Table 4 summarises the outcomes for developmental strategies addressing the need for capacity development. The main areas in which development strategies were employed were capacity development, skills development and resource development. The outcomes of the respective developmental strategies in each of these areas are presented below in tabular form.

Table 4: Capacity development outcomes

Strategies	Outcomes	Number/Total (%)
Staff relief (n = 11)	PhD throughput Completed Ongoing	10/11 (90.91%) 10 1
Student scholarships (n = 16)	Total throughput Master's (n = 5) Completed PhDs (n = 11) Completed Ongoing Discontinued	11/16 (68.75%) 5/5 (100%) 6/11 (54.54%) 3/11 (27.27%) 2/11 (18.18%)
Manuscript preparation (Writing retreats, Special editions, Theses conversions)	Publications Writing retreats (n = 41 attendees) Staff relief (n = 11) Theses conversions(n = 6) Edited Book(n = 1)	34 34/41 (82.93 %) 7/11 (63.63%) 6/6 (100%) 1 (100%)
Conferences organisation (n = 3)	National International	1 2
North-south exchange (n = 14)	Co-Supervisors Students Masters PhD	5 9 1 8
Development of research niche areas (n = 3)	Sport for development Health & Well-being Risk & resilience	
Centres of excellence (n = 2)	ICESSD HIV	

From Table 4 it is evident that 21 higher degrees were completed through this initiative, ten academic qualifications of which were attained by staff. The developmental strategies employed in the project resulted in 34 publications in national ($n = 11$) and international ($n = 23$) journals in the second phase of the project, that represented a substantial increase in the average publication output for the faculty. Six theses completed in partial or total fulfilment of higher degree requirements were also converted into publications. Three conferences were organised which provided opportunities for networking with local and international scholars. In addition, three niche areas and two centres of excellence were developed.

The outcomes for strategies aimed at addressing skills development showed that 25 training courses in the form of short courses and research seminars were presented, with a reach of 300 participants. Research seminars included topics such as quantitative research methodology, systematic reviews and qualitative research methods. Short courses included topics such as sport and recreation for community development, physical activity and recreation in psychosocial and health intervention. In addition a postgraduate qualification in the form of a master's programme in sports for development emerged. Resource development included the acquisition of resources such as strength and endurance training, equipment and electronic devices (laptops, etc., software, literature and books).

DISCUSSION

There is a growing acknowledgement that Africa's future rests with the development of its intellectual and human capital through strong capacity-building programmes and systems in higher education and the development of locally relevant and applicable research and innovation structures. The findings of the study illustrate the extent to which the research capacity objectives can be achieved through a north-south partnership. The fact that the southern counterparts were able to articulate their needs and use the partnership as a vehicle to address those needs is a definite positive of the model. This is consistent with the recommendation in the literature that north-south collaborative projects are some of the avenues through which the research capacity development objectives can be achieved (Chege 2008).

Engaging partners and building consensus

The purpose during this phase was to identify the strengths and weaknesses or challenges of the partnership in order to implement collaboration between the north and south partners. Collaboration and the time taken to achieve measurable outcomes can be a challenge. However, within the current north-south collaboration, the vision to build research capacity was mutual as it was one of the IOP goals of the south institution. The initial results suggest that the south institution was challenged in terms of staff capacity and thus a critical mass of productive researchers was needed. Velho (2001, 26) emphasises that 'in order to build the much needed research oriented capabilities in the south, partnerships with countries in the north are essential'.

Assessing capacity assets and needs

Velho (2001, 34) states that 'when evaluating the impact of collaborative efforts of it is often pointed out that the activities in the South are driven by the donor's goodwill'. The southern institution where the collaboration project was implemented had very clear and specific research objectives which are unambiguously formulated in their institutional operating plan. The southern partner could at the outset specify their needs and identify the areas where they needed support. This made it easier to find northern partners because their potential roles could be extracted from the stated needs. The project objectives were therefore south-driven and were pursued, not by the 'goodwill' of partners, but by their sincere interest and dedication to address the specified needs and thereby advance the academic objectives of the south partner. The project was linked to clearly identified needs and therefore contributed to the overall strategic objectives of the institution as reflected in the IOP (2010–2014).

This collaboration identified four needs as: increasing postgraduate qualifications, publications, supervision skills, and exposure to quality research infrastructure. Thus there was balance in the partnership with no dominance from the north, as indicated in literature (Gaillard 1994).

Defining capacity development strategies

Capacity development strategies are context-specific and it is therefore difficult to identify a single set of best practices that can be put forward as a model for improved capacity development (Segrott, McIvor and Green 2006, 649). However, the current model in this study based on the needs of the partners assists in defining appropriate capacity development strategies. The clear needs identified were capacity development, skills development, and resources development. The strategies in the current study were diverse, and incorporated a variety of approaches such as staff relief funding, scholarships and writing retreats. In addition, seminars and short courses were incorporated to build capacity. This approach is supported by Finch (2003) who states that research capacity building requires an overall approach that braids together multiple strategies.

Implementing the strategies

Building upon the momentum of having identified key strategies in the IOP we recognise the need to implement these strategies. The north-south collaboration provided the supportive infrastructure through resources and the relevant institutional policies and procedures to implement effective strategies. From phase 1 to phase 2 an incremental approach was taken where each phase was guided by progress and feedback reports. Prior to this north-south collaboration, the CHS faculty mainly focused on professional training. Not much emphasis was placed on post-graduate studies. Most of the staff in the CHS faculty did not have a PhD, and some did not have Masters degrees. Post-graduate studies were also initially not a priority at the University of the Western Cape (UWC) until the shift from a teaching university to a research-led university became a priority objective in the university's 2010–2014 IOP. This north-south partnership created space and opportunities both for staff and students to pursue higher degrees. The co-supervision approach that was employed exposed south staff and students to the skills, expertise and experience of their northern counterparts. It elevated southern academics' skills as supervisors and as researchers, and it also assisted in fore-fronting their research activities. Publications emanating mainly from VLIR-related research activities were positive.

This output as a result of implementing successful strategies is supported by the literature that highlights knowledge translation as important (Holmes, Scarrow and Schellenberg 2012). During the collaboration, the transfer of knowledge resulted in successful outputs thanks to supporting activities such as the provision of adequate forums for knowledge users and researchers, providing training and support, and providing funding for activities to develop others.

Monitoring and evaluation of the output

Although this collaboration was based within a bigger project, the decentralised approach allowed for the south partners to establish monitoring and evaluation systems based on their goals and vision. Very specific expectations for each need and

goal were identified and linked to specific outcomes. These project outcomes and goals were ultimately linked to the monitoring and evaluation systems of the bigger project. Collection of evidence regarding progress and facilitating or hindering factors was one method employed by the partnership to determine the need for guiding infrastructures. These factors were reviewed and addressed at monthly management meetings within the bigger project. In this way, the south did not simply implement research capacity strategies and assume that success would occur, but continuously monitored and evaluated the outcomes and impacts towards achieving the collaborative goals over time (Kusek and Rist 2004).

CONCLUSION

Through this north-south collaboration, members of the collaboration were able to develop intra- and inter-disciplinary partnerships that resulted in maximising the capacity-building efforts. The exposure to this collaboration improved both individual and institutional research capacity in the south.

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